

Applicant: Peter Kaever

Application No.:

1. (Currently Amended) A method Method for providing data for a control system of a milk cooling arrangement (4) with at least one cooling tank (6) of a milking system, in which cooling tank related as well as milk specific data on at least a few milking stations are determined and these are made available to the control system controlling a milk cooling system in a dairy, the method comprising the steps of:

obtaining cooling tank data from a cooling tank and milk data from milk flowing through a milking station;

providing the cooling tank and milk data to a controller for a milk cooling system; and
controlling the milk cooling system in response to the cooling tank and milk data.

2. (Currently Amended) The method Method according to [[€]]claim 1, in which the step of obtaining the milk specific data comprises the step of obtaining contain information about the amount of milk milked, temperature, flow velocity and/or specific heat capacity of the milk.

3. (Currently Amended) The method Method according to [[€]]claim 1 or 2, in which the cooling tank related step of obtaining cooling tank data comprises the step of obtaining data contain information about the amount of milk located in the cooling tank (6), storage capacity, residual capacity, temperature, cooling performance and/or state of a cooling installation.

4. (Currently Amended) The method Method according to [[€]]claim 1, 2, or 3, in which the control system is provided with and further comprising the steps of:

obtaining milk history data on an individual animal's milking history; and, data specific to groups and herds, statistical data and/or milking parlor management data
providing the milking history data to the controller.

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5. (Currently Amended) A method Method for cooling of milk in a milk cooling arrangement (4) with at least one cooling tank (6) and at least one cooling device of a milking system with the method comprising the following steps of:

- a) Determination of the determining an amount and temperature of milk milked flowing from at least in one a milking parlor as well as a temperature of the amount of milk milked, which is led at least partly into at least one cooling tank (6);
- b) Determination of determining an amount and temperature of milk as well as a temperature of the amount of milk in the a cooling tanks (6), to which the milked amount of milk from the milking parlor will be led flow;
- c) Determination of at least one characteristic quantity from the data determined in steps a) and b) determining whether mixing the milk from the milking parlor with the milk in the cooling tank will cause the temperatures of the milk in the cooling tank to be outside of a predetermined temperature range; and
- d) Activation of the activating a cooling installation when at least one characteristic quantity is outside a tolerance field, especially when it exceeds a set threshold value to maintain the temperature of the milk in the cooling tank within the predetermined temperature range.

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6. (Currently Amended) The method Method according to [[€]]claim 5, and further comprising the step of:

determining whether the potential temperature change to milk in the cooling tank requires pre-cooling of milk from the milking parlor before mixing with milk in the cooling tank in which the amount of heat of the milked amount of milk and/or a theoretical mixing temperature in the cooling tank (6) is determined.

7. (Currently Amended) The method Method according to [[€]]claim 5 or 6, in which the temperature of the milked amount of milk from the milking parlor is estimated and/or measured in the milking parlor.

8. (Currently Amended) The method Method according to [[€]]claim 7, in which the temperature of the milked amount of milk from the milking parlor at the milking station and/or at the inlet into the cooling tank (6) is determined at a milking machine.

9. (Currently Amended) The method Method according to one of Cclaim[[s]] 5 to 8, in which the milked amount of milk from the milking parlor is predicted from previously obtained milking data on individual animals.

10. (Currently Amended) The method Method according to one of Cclaim[[s]] 5 to 9, in which the milked amount of milk from the milking parlor is determined directly or indirectly, especially by the step of:

measuring the amount of the milk or from the data of pumped through a milk pump.

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11. (Currently Amended) The method Method according to [[€]]claim 8, 9 or 10, in which a first and further comprising the step of:
determining from a milking history, an approximate value for the characteristic quantity
of the data on milk to be received from individual animals; is determined and
activating the cooling device is activated when mixing that approximate quantity of milk
with the milk in the cooling tank the approximate value is could cause the
temperature of the milk in the cooling tank to be outside a predetermined range a
tolerance field, especially when it exceeds a set threshold value.

12. (Currently Amended) The method Method according to at least one of the previous
€claim[[s]] 5 to 11, in which the and further comprising the step of:
determining a flow time is determined at in which the amount of milk milked from the
milking parlor will arrive[[s]] into at the cooling tank [[(€)]].

13. (Currently Amended) The method Method according to one of €claim[[s]] 5 to 11, in
which the milking system has several milking stations, whereby at at least one milking station,
preferably at all milking stations, at least one determination is performed of the amounts of milk
milked at the respective milking stations and further comprising the steps of:
determining milk amounts and temperatures at a plurality of milking stations in the
milking parlor;
determining an approximate temperature increase in the milk in the cooling tank resulting
from being mixed with the milk from the milking parlor; and
activating the cooling installation to maintain the milk in the cooling tank within the
predetermined temperature range.

14. (Canceled)

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15. (Currently Amended) The method Method according to [[€]]claim 13, in which the characteristic quantity is amount of milk from the milking parlor is determined centrally, preferably in a central herd-management system.

16. (Currently Amended) The method Method according to one or several of the previous claims[[s]] 5 to 15, in which, as a function of at least one characteristic quantity and/or of the expected and/or actually milked amount of milk, the latter is passed into different cooling tanks
(6) the step of activating the cooling installation comprises the step of:

directing milk from the milking parlor into different cooling tanks.

17. (Currently Amended) A [[€]]control system of a milk cooling arrangement with at least one cooling tank (6), whereby this has comprising:

a signal evaluation device which is provided for providing signals which correspond to cooling-tank-specific and milk-specific data of at least one milking station; and has a controller element which is in cooperation with for receiving signals from the signal evaluation unit and controlling a cooling installation, so that it activates the cooling installation as a function of the signals provided through the signal evaluation unit to the control element.

18. (Currently Amended) The [[€]]control system according to [[€]]claim 17, characterized by the fact that wherein the controller comprises:

at least one milking station has a milking station control which is a component of the control system.

19. (Currently Amended) The [[€]]control system according to [[€]]claim 17, characterized by the fact that wherein the signal evaluation device unit is formed by comprises a central data processing installation.

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20. (Currently Amended) The [[€]]control system according to [[€]]claim 17, 18 or 19,
characterized by the fact that and further comprising:

a herd-management system that transmits data, ~~especially data~~ on individual animals[[,]]
to the signal evaluation device.

21. (New) The method according to claim 1, in which the signal evaluation device
provides signals related to milk flow velocity.

22. (New) The method according to claim 1, in which the signal evaluation device
provides signals related to the specific heat capacity of the milk.

23. (New) The method according to claim 1, in which the signal evaluation device
provides signals related to the amount of milk located in the cooling tank.

24. (New) The method according to claim 1, in which the signal evaluation device
provides signals related to the amount of cooling tank residual capacity.

25. (New) The method according to claim 1, in which the signal evaluation device
provides signals related to the cooling tank temperature.

26. (New) The method according to claim 1, in which the signal evaluation device
provides signals related to the cooling tank cooling performance.

27. (New) The method according to claim 1, in which the signal evaluation device
provides signals related to the cooling tank cooling installation.

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Conclusion

The aforementioned amendments simply conform the claims to U.S. standards and to be without multiple dependencies. No new matter has been added. Applicants respectfully request that the amendment be entered.

Respectfully submitted,

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